

Name: _____

at1124exam: Radicals and Squares (v901)

Question 1

Simplify the radical expressions.

$$\sqrt{63}$$

$$\sqrt{50}$$

$$\sqrt{27}$$

Question 2

Find all solutions to the equation below:

$$\frac{(x - 5)^2}{3} + 2 = 14$$

Question 3

By completing the square, find both solutions to the given equation. *You must show work for full credit!*

$$x^2 - 6x = 27$$

Question 4

Any quadratic function, with vertex at (h, k) , can be expressed in vertex form:

$$y = a(x - h)^2 + k$$

A quadratic function is shown below in standard form.

$$y = 2x^2 - 16x + 39$$

Express the function in **vertex form** and identify the **location** of the vertex.

Name: _____

at1124exam: Radicals and Squares (v902)

Question 1

Simplify the radical expressions.

$$\sqrt{12}$$

$$\sqrt{18}$$

$$\sqrt{63}$$

Question 2

Find all solutions to the equation below:

$$2((x+4)^2 - 9) = 32$$

Question 3

By completing the square, find both solutions to the given equation. *You must show work for full credit!*

$$x^2 + 18x = -72$$

Question 4

Any quadratic function, with vertex at (h, k) , can be expressed in vertex form:

$$y = a(x - h)^2 + k$$

A quadratic function is shown below in standard form.

$$y = 4x^2 - 24x + 28$$

Express the function in **vertex form** and identify the **location** of the vertex.

Name: _____

at1124exam: Radicals and Squares (v903)

Question 1

Simplify the radical expressions.

$$\sqrt{28}$$

$$\sqrt{8}$$

$$\sqrt{63}$$

Question 2

Find all solutions to the equation below:

$$2((x - 4)^2 + 3) = 56$$

Question 3

By completing the square, find both solutions to the given equation. *You must show work for full credit!*

$$x^2 - 14x = 95$$

Question 4

Any quadratic function, with vertex at (h, k) , can be expressed in vertex form:

$$y = a(x - h)^2 + k$$

A quadratic function is shown below in standard form.

$$y = 2x^2 + 24x + 75$$

Express the function in **vertex form** and identify the **location** of the vertex.

Name: _____

at1124exam: Radicals and Squares (v904)

Question 1

Simplify the radical expressions.

$$\sqrt{8}$$

$$\sqrt{99}$$

$$\sqrt{50}$$

Question 2

Find all solutions to the equation below:

$$2((x + 8)^2 + 9) = 50$$

Question 3

By completing the square, find both solutions to the given equation. *You must show work for full credit!*

$$x^2 - 10x = 39$$

Question 4

Any quadratic function, with vertex at (h, k) , can be expressed in vertex form:

$$y = a(x - h)^2 + k$$

A quadratic function is shown below in standard form.

$$y = 4x^2 + 24x + 41$$

Express the function in **vertex form** and identify the **location** of the vertex.

Name: _____

at1124exam: Radicals and Squares (v905)

Question 1

Simplify the radical expressions.

$$\sqrt{18}$$

$$\sqrt{27}$$

$$\sqrt{98}$$

Question 2

Find all solutions to the equation below:

$$3(x + 9)^2 + 8 = 83$$

Question 3

By completing the square, find both solutions to the given equation. *You must show work for full credit!*

$$x^2 + 6x = 40$$

Question 4

Any quadratic function, with vertex at (h, k) , can be expressed in vertex form:

$$y = a(x - h)^2 + k$$

A quadratic function is shown below in standard form.

$$y = 2x^2 - 24x + 65$$

Express the function in **vertex form** and identify the **location** of the vertex.

Name: _____

at1124exam: Radicals and Squares (v906)

Question 1

Simplify the radical expressions.

$$\sqrt{44}$$

$$\sqrt{27}$$

$$\sqrt{98}$$

Question 2

Find all solutions to the equation below:

$$\frac{(x - 8)^2}{9} + 2 = 11$$

Question 3

By completing the square, find both solutions to the given equation. *You must show work for full credit!*

$$x^2 + 10x = -16$$

Question 4

Any quadratic function, with vertex at (h, k) , can be expressed in vertex form:

$$y = a(x - h)^2 + k$$

A quadratic function is shown below in standard form.

$$y = 3x^2 - 30x + 83$$

Express the function in **vertex form** and identify the **location** of the vertex.

Name: _____

at1124exam: Radicals and Squares (v907)

Question 1

Simplify the radical expressions.

$$\sqrt{99}$$

$$\sqrt{63}$$

$$\sqrt{28}$$

Question 2

Find all solutions to the equation below:

$$2((x+6)^2 - 8) = 82$$

Question 3

By completing the square, find both solutions to the given equation. *You must show work for full credit!*

$$x^2 - 10x = 39$$

Question 4

Any quadratic function, with vertex at (h, k) , can be expressed in vertex form:

$$y = a(x - h)^2 + k$$

A quadratic function is shown below in standard form.

$$y = 4x^2 - 40x + 92$$

Express the function in **vertex form** and identify the **location** of the vertex.

Name: _____

at1124exam: Radicals and Squares (v908)

Question 1

Simplify the radical expressions.

$$\sqrt{63}$$

$$\sqrt{18}$$

$$\sqrt{20}$$

Question 2

Find all solutions to the equation below:

$$2(x - 10)^2 - 7 = 43$$

Question 3

By completing the square, find both solutions to the given equation. *You must show work for full credit!*

$$x^2 + 8x = -7$$

Question 4

Any quadratic function, with vertex at (h, k) , can be expressed in vertex form:

$$y = a(x - h)^2 + k$$

A quadratic function is shown below in standard form.

$$y = 3x^2 + 36x + 100$$

Express the function in **vertex form** and identify the **location** of the vertex.

Name: _____

at1124exam: Radicals and Squares (v909)

Question 1

Simplify the radical expressions.

$$\sqrt{12}$$

$$\sqrt{75}$$

$$\sqrt{45}$$

Question 2

Find all solutions to the equation below:

$$3((x+5)^2 - 8) = 84$$

Question 3

By completing the square, find both solutions to the given equation. *You must show work for full credit!*

$$x^2 + 18x = -56$$

Question 4

Any quadratic function, with vertex at (h, k) , can be expressed in vertex form:

$$y = a(x - h)^2 + k$$

A quadratic function is shown below in standard form.

$$y = 2x^2 - 20x + 41$$

Express the function in **vertex form** and identify the **location** of the vertex.

Name: _____

at1124exam: Radicals and Squares (v910)

Question 1

Simplify the radical expressions.

$$\sqrt{75}$$

$$\sqrt{18}$$

$$\sqrt{8}$$

Question 2

Find all solutions to the equation below:

$$10 \left((x + 6)^2 - 9 \right) = 70$$

Question 3

By completing the square, find both solutions to the given equation. *You must show work for full credit!*

$$x^2 - 6x = 55$$

Question 4

Any quadratic function, with vertex at (h, k) , can be expressed in vertex form:

$$y = a(x - h)^2 + k$$

A quadratic function is shown below in standard form.

$$y = 3x^2 + 30x + 68$$

Express the function in **vertex form** and identify the **location** of the vertex.

Name: _____

at1124exam: Radicals and Squares (v911)

Question 1

Simplify the radical expressions.

$$\sqrt{12}$$

$$\sqrt{50}$$

$$\sqrt{20}$$

Question 2

Find all solutions to the equation below:

$$2((x+7)^2 + 8) = 88$$

Question 3

By completing the square, find both solutions to the given equation. *You must show work for full credit!*

$$x^2 + 16x = 57$$

Question 4

Any quadratic function, with vertex at (h, k) , can be expressed in vertex form:

$$y = a(x - h)^2 + k$$

A quadratic function is shown below in standard form.

$$y = 2x^2 + 12x + 23$$

Express the function in **vertex form** and identify the **location** of the vertex.

Name: _____

at1124exam: Radicals and Squares (v912)

Question 1

Simplify the radical expressions.

$$\sqrt{99}$$

$$\sqrt{50}$$

$$\sqrt{63}$$

Question 2

Find all solutions to the equation below:

$$2 \left((x - 10)^2 + 10 \right) = 70$$

Question 3

By completing the square, find both solutions to the given equation. *You must show work for full credit!*

$$x^2 - 8x = 65$$

Question 4

Any quadratic function, with vertex at (h, k) , can be expressed in vertex form:

$$y = a(x - h)^2 + k$$

A quadratic function is shown below in standard form.

$$y = 2x^2 - 24x + 69$$

Express the function in **vertex form** and identify the **location** of the vertex.

Name: _____

at1124exam: Radicals and Squares (v913)

Question 1

Simplify the radical expressions.

$$\sqrt{28}$$

$$\sqrt{12}$$

$$\sqrt{98}$$

Question 2

Find all solutions to the equation below:

$$\frac{(x + 9)^2 + 5}{9} = 6$$

Question 3

By completing the square, find both solutions to the given equation. *You must show work for full credit!*

$$x^2 - 14x = -33$$

Question 4

Any quadratic function, with vertex at (h, k) , can be expressed in vertex form:

$$y = a(x - h)^2 + k$$

A quadratic function is shown below in standard form.

$$y = 4x^2 + 40x + 93$$

Express the function in **vertex form** and identify the **location** of the vertex.

Name: _____

at1124exam: Radicals and Squares (v914)

Question 1

Simplify the radical expressions.

$$\sqrt{18}$$

$$\sqrt{20}$$

$$\sqrt{27}$$

Question 2

Find all solutions to the equation below:

$$\frac{(x - 10)^2 + 3}{6} = 14$$

Question 3

By completing the square, find both solutions to the given equation. *You must show work for full credit!*

$$x^2 - 10x = 96$$

Question 4

Any quadratic function, with vertex at (h, k) , can be expressed in vertex form:

$$y = a(x - h)^2 + k$$

A quadratic function is shown below in standard form.

$$y = 3x^2 + 24x + 39$$

Express the function in **vertex form** and identify the **location** of the vertex.

Name: _____

at1124exam: Radicals and Squares (v915)

Question 1

Simplify the radical expressions.

$$\sqrt{27}$$

$$\sqrt{75}$$

$$\sqrt{63}$$

Question 2

Find all solutions to the equation below:

$$\frac{(x + 6)^2 - 9}{10} = 4$$

Question 3

By completing the square, find both solutions to the given equation. *You must show work for full credit!*

$$x^2 + 12x = 85$$

Question 4

Any quadratic function, with vertex at (h, k) , can be expressed in vertex form:

$$y = a(x - h)^2 + k$$

A quadratic function is shown below in standard form.

$$y = 4x^2 - 24x + 27$$

Express the function in **vertex form** and identify the **location** of the vertex.

Name: _____

at1124exam: Radicals and Squares (v916)

Question 1

Simplify the radical expressions.

$$\sqrt{99}$$

$$\sqrt{75}$$

$$\sqrt{44}$$

Question 2

Find all solutions to the equation below:

$$3((x - 4)^2 - 7) = 87$$

Question 3

By completing the square, find both solutions to the given equation. *You must show work for full credit!*

$$x^2 - 8x = -7$$

Question 4

Any quadratic function, with vertex at (h, k) , can be expressed in vertex form:

$$y = a(x - h)^2 + k$$

A quadratic function is shown below in standard form.

$$y = 3x^2 - 24x + 39$$

Express the function in **vertex form** and identify the **location** of the vertex.

Name: _____

at1124exam: Radicals and Squares (v917)

Question 1

Simplify the radical expressions.

$$\sqrt{98}$$

$$\sqrt{63}$$

$$\sqrt{27}$$

Question 2

Find all solutions to the equation below:

$$\frac{(x - 9)^2}{4} - 10 = -1$$

Question 3

By completing the square, find both solutions to the given equation. *You must show work for full credit!*

$$x^2 - 18x = 63$$

Question 4

Any quadratic function, with vertex at (h, k) , can be expressed in vertex form:

$$y = a(x - h)^2 + k$$

A quadratic function is shown below in standard form.

$$y = 2x^2 + 28x + 94$$

Express the function in **vertex form** and identify the **location** of the vertex.

Name: _____

at1124exam: Radicals and Squares (v918)

Question 1

Simplify the radical expressions.

$$\sqrt{63}$$

$$\sqrt{98}$$

$$\sqrt{45}$$

Question 2

Find all solutions to the equation below:

$$\frac{(x + 6)^2}{2} + 9 = 17$$

Question 3

By completing the square, find both solutions to the given equation. *You must show work for full credit!*

$$x^2 - 14x = -40$$

Question 4

Any quadratic function, with vertex at (h, k) , can be expressed in vertex form:

$$y = a(x - h)^2 + k$$

A quadratic function is shown below in standard form.

$$y = 2x^2 + 24x + 77$$

Express the function in **vertex form** and identify the **location** of the vertex.

Name: _____

at1124exam: Radicals and Squares (v919)

Question 1

Simplify the radical expressions.

$$\sqrt{98}$$

$$\sqrt{8}$$

$$\sqrt{99}$$

Question 2

Find all solutions to the equation below:

$$\frac{(x - 6)^2}{2} + 8 = 58$$

Question 3

By completing the square, find both solutions to the given equation. *You must show work for full credit!*

$$x^2 + 14x = 95$$

Question 4

Any quadratic function, with vertex at (h, k) , can be expressed in vertex form:

$$y = a(x - h)^2 + k$$

A quadratic function is shown below in standard form.

$$y = 3x^2 + 30x + 81$$

Express the function in **vertex form** and identify the **location** of the vertex.

Name: _____

at1124exam: Radicals and Squares (v920)

Question 1

Simplify the radical expressions.

$$\sqrt{63}$$

$$\sqrt{45}$$

$$\sqrt{44}$$

Question 2

Find all solutions to the equation below:

$$\frac{(x + 7)^2}{4} + 10 = 35$$

Question 3

By completing the square, find both solutions to the given equation. *You must show work for full credit!*

$$x^2 - 16x = 80$$

Question 4

Any quadratic function, with vertex at (h, k) , can be expressed in vertex form:

$$y = a(x - h)^2 + k$$

A quadratic function is shown below in standard form.

$$y = 2x^2 + 28x + 93$$

Express the function in **vertex form** and identify the **location** of the vertex.

Name: _____

at1124exam: Radicals and Squares (v921)

Question 1

Simplify the radical expressions.

$$\sqrt{98}$$

$$\sqrt{8}$$

$$\sqrt{27}$$

Question 2

Find all solutions to the equation below:

$$6((x - 10)^2 - 7) = 54$$

Question 3

By completing the square, find both solutions to the given equation. *You must show work for full credit!*

$$x^2 - 10x = -16$$

Question 4

Any quadratic function, with vertex at (h, k) , can be expressed in vertex form:

$$y = a(x - h)^2 + k$$

A quadratic function is shown below in standard form.

$$y = 2x^2 - 20x + 56$$

Express the function in **vertex form** and identify the **location** of the vertex.

Name: _____

at1124exam: Radicals and Squares (v922)

Question 1

Simplify the radical expressions.

$$\sqrt{8}$$

$$\sqrt{20}$$

$$\sqrt{45}$$

Question 2

Find all solutions to the equation below:

$$3((x - 7)^2 + 6) = 93$$

Question 3

By completing the square, find both solutions to the given equation. *You must show work for full credit!*

$$x^2 + 10x = 39$$

Question 4

Any quadratic function, with vertex at (h, k) , can be expressed in vertex form:

$$y = a(x - h)^2 + k$$

A quadratic function is shown below in standard form.

$$y = 2x^2 + 24x + 77$$

Express the function in **vertex form** and identify the **location** of the vertex.

Name: _____

at1124exam: Radicals and Squares (v923)

Question 1

Simplify the radical expressions.

$$\sqrt{50}$$

$$\sqrt{27}$$

$$\sqrt{45}$$

Question 2

Find all solutions to the equation below:

$$\frac{(x + 6)^2 - 9}{8} = 2$$

Question 3

By completing the square, find both solutions to the given equation. *You must show work for full credit!*

$$x^2 - 6x = 91$$

Question 4

Any quadratic function, with vertex at (h, k) , can be expressed in vertex form:

$$y = a(x - h)^2 + k$$

A quadratic function is shown below in standard form.

$$y = 4x^2 - 24x + 28$$

Express the function in **vertex form** and identify the **location** of the vertex.

Name: _____

at1124exam: Radicals and Squares (v924)

Question 1

Simplify the radical expressions.

$$\sqrt{63}$$

$$\sqrt{27}$$

$$\sqrt{20}$$

Question 2

Find all solutions to the equation below:

$$\frac{(x - 8)^2 + 10}{5} = 7$$

Question 3

By completing the square, find both solutions to the given equation. *You must show work for full credit!*

$$x^2 + 6x = 7$$

Question 4

Any quadratic function, with vertex at (h, k) , can be expressed in vertex form:

$$y = a(x - h)^2 + k$$

A quadratic function is shown below in standard form.

$$y = 2x^2 - 16x + 23$$

Express the function in **vertex form** and identify the **location** of the vertex.

Name: _____

at1124exam: Radicals and Squares (v925)

Question 1

Simplify the radical expressions.

$$\sqrt{27}$$

$$\sqrt{98}$$

$$\sqrt{44}$$

Question 2

Find all solutions to the equation below:

$$2((x - 4)^2 + 9) = 90$$

Question 3

By completing the square, find both solutions to the given equation. *You must show work for full credit!*

$$x^2 + 10x = -9$$

Question 4

Any quadratic function, with vertex at (h, k) , can be expressed in vertex form:

$$y = a(x - h)^2 + k$$

A quadratic function is shown below in standard form.

$$y = 5x^2 + 40x + 71$$

Express the function in **vertex form** and identify the **location** of the vertex.

Name: _____

at1124exam: Radicals and Squares (v926)

Question 1

Simplify the radical expressions.

$$\sqrt{75}$$

$$\sqrt{28}$$

$$\sqrt{45}$$

Question 2

Find all solutions to the equation below:

$$2(x + 9)^2 + 10 = 42$$

Question 3

By completing the square, find both solutions to the given equation. *You must show work for full credit!*

$$x^2 + 12x = 64$$

Question 4

Any quadratic function, with vertex at (h, k) , can be expressed in vertex form:

$$y = a(x - h)^2 + k$$

A quadratic function is shown below in standard form.

$$y = 5x^2 + 40x + 73$$

Express the function in **vertex form** and identify the **location** of the vertex.

Name: _____

at1124exam: Radicals and Squares (v927)

Question 1

Simplify the radical expressions.

$$\sqrt{28}$$

$$\sqrt{99}$$

$$\sqrt{27}$$

Question 2

Find all solutions to the equation below:

$$\frac{(x - 4)^2}{2} - 6 = 12$$

Question 3

By completing the square, find both solutions to the given equation. *You must show work for full credit!*

$$x^2 + 10x = 96$$

Question 4

Any quadratic function, with vertex at (h, k) , can be expressed in vertex form:

$$y = a(x - h)^2 + k$$

A quadratic function is shown below in standard form.

$$y = 3x^2 - 24x + 56$$

Express the function in **vertex form** and identify the **location** of the vertex.

Name: _____

at1124exam: Radicals and Squares (v928)

Question 1

Simplify the radical expressions.

$$\sqrt{63}$$

$$\sqrt{28}$$

$$\sqrt{44}$$

Question 2

Find all solutions to the equation below:

$$2((x - 9)^2 + 9) = 90$$

Question 3

By completing the square, find both solutions to the given equation. *You must show work for full credit!*

$$x^2 + 18x = 63$$

Question 4

Any quadratic function, with vertex at (h, k) , can be expressed in vertex form:

$$y = a(x - h)^2 + k$$

A quadratic function is shown below in standard form.

$$y = 5x^2 + 30x + 38$$

Express the function in **vertex form** and identify the **location** of the vertex.

Name: _____

at1124exam: Radicals and Squares (v929)

Question 1

Simplify the radical expressions.

$$\sqrt{98}$$

$$\sqrt{99}$$

$$\sqrt{75}$$

Question 2

Find all solutions to the equation below:

$$2(x + 4)^2 - 8 = 90$$

Question 3

By completing the square, find both solutions to the given equation. *You must show work for full credit!*

$$x^2 - 14x = 95$$

Question 4

Any quadratic function, with vertex at (h, k) , can be expressed in vertex form:

$$y = a(x - h)^2 + k$$

A quadratic function is shown below in standard form.

$$y = 4x^2 + 24x + 41$$

Express the function in **vertex form** and identify the **location** of the vertex.

Name: _____

at1124exam: Radicals and Squares (v930)

Question 1

Simplify the radical expressions.

$$\sqrt{50}$$

$$\sqrt{8}$$

$$\sqrt{28}$$

Question 2

Find all solutions to the equation below:

$$\frac{(x + 7)^2}{5} + 2 = 7$$

Question 3

By completing the square, find both solutions to the given equation. *You must show work for full credit!*

$$x^2 - 16x = 57$$

Question 4

Any quadratic function, with vertex at (h, k) , can be expressed in vertex form:

$$y = a(x - h)^2 + k$$

A quadratic function is shown below in standard form.

$$y = 2x^2 + 16x + 37$$

Express the function in **vertex form** and identify the **location** of the vertex.